





## 'Stern fishers stay'

RUMOURS that two of Fleetwood's most modern stern trawlers — *Boston* and *Beverley* — were leaving the port were firmly denied last week.

Both vessels, currently taking part in the south-west meckel fishing, were rumoured to be leaving the port after the season.

But last week Mr. A. W. Suddaby, managing director of the owning company, Boston Deep Sea Fisheries, said from his Hull office: "There is certainly no question of these ships leaving Fleetwood at present. The fishing industry is an ever-changing world, of course, but we have no plans for them not to go back to Fleetwood."

He said they might even be returning to the port sooner than expected because of restrictions on meckel fishing.

## 'Innes' back

HAMMOND INNES, one of Hull's top wet fish stern trawlers, is back fishing after a break of four months.

The vessel last landed on June 9 after a Bear Island trip. Three weeks later she developed engine trouble in the Humber and, on July 3, she was towed into Rotterdam for repairs.

She resumed fishing last Saturday under Skipper Bill Brettell on a north-easterly trip.

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# BANNED HERRING IS GIVEN AWAY

YARMOUTH boat owner and businessman Percy Field gave away a catch of herring at the port last week in protest at the ban on herring fishing in the North Sea. But the ban has been confirmed again this week, despite pleas for a local exemption.

Frank Moore, secretary of Yarmouth's Inshore Fishermen's Federation, had asked for an exemption on the grounds that the variety of herring caught was different to the main North Sea stock.

Fisheries Minister, Edward Bishop, replied: "It is clear that the North Sea stock is now at an extremely critical level."

"In view of this the government has thought it right in the long-term interest of the industry to press for a total ban on herring fishing throughout the North Sea."

It was the government's intention to press for an extension of the ban beyond the end of the month. "Our position would be seriously weakened if we were to ask for exemptions for our own fishermen."

But he held out some hope when he said: "We are considering whether it might be possible to more adequately protect inshore fishermen"

using traditional fishing methods. But this is very uncertain at this stage in view of the difficulties of reaching international agreement on fisheries regulation."

The herring were handed out in protest to housewives, passers-by and local families who filled bags, boxes and sacks. Mr. Field's boat, *Alido*, had landed the catch at the Mission Quay.

Around 15,000 herring were taken on a mackerel trip two miles off the coast between Winterton and Cromer. His action brought a warning from the Ministry of Fisheries district inspector, Mr. G. J. Y. Thorpe, that he was breaking the law by refusing to dump the fish

back in the sea on catching it. North Sea herring fishing — apart from a small stock near the Blackwater river off the Essex coast — was banned in February to conserve stocks.

Mr. Field, a Yarmouth borough councillor, has been campaigning for the ban to be lifted for East Anglian inshore fishermen.

"We are supposed to throw back any herring we catch", he said, "even though they die almost as soon as they land on the deck. I do not want to dump them back in the sea — it is a waste of good fish."

"There is a big chance I could be prosecuted for this. I do not care if I go to

prison."

The district fisheries inspector, Mr. Thorpe, said Mr. Field's action contravened the herring order.

Mr. Field, who was not aboard during the trip, said he had held a quantity back to pass on to local hospitals.

Mr. Field engaged Yarmouth's inshore fishermen's federation recently when he launched a campaign for a dispensation on the herring bnn for inshore fishermen between Harwich and Humstanton.

Federation secretary, Frank Moore, accused him of jumping on the bandwagon. "We have been running our own campaign for months", said Mr. Moore.

ing catches to Plymouth this week.

They could be the first prosecutions in the UK since a ban on herring fishing was imposed in July. Charges are being considered by the Ministry of Agriculture, Fisheries and Food.

Under EEC regulations herring fishing was banned in July until December 31 in areas including the south-west coast of England, the Celtic Sea and the east coast of Scotland. The move is to help the over-fished stocks to regenerate.

The Ministry confirmed on Tuesday that two vessels had been apprehended in Plymouth on Monday. It is claimed that they were off-loading herring at the time.

Neither vessel has been identified by the Ministry but it is understood that about 100 tons of herring were landed.

A Ministry spokesman said: "We are considering the facts as presented by the fisheries inspectorate. In most cases of illegal fishing, the boats are asked to accompany us into port, but these were actually unloading in

£120,000 DAMAGES IN DOCK FIRE

A BLAZE at Millbay Dock, Plymouth, on Tuesday, caused about £120,000 worth of damage and is a big set-back for Salvage in the south-west.

The fire was in a warehouse leased to Plymouth Fish Selling Co., part of the Salvage Group, containing an ice plant for meckel, thousands of fish boxes and valuable equipment for fish handling and grading.

A recently installed ice plant and a 50-ton ice store, completed three weeks ago, were destroyed. The units were worth about £40,000.

A 24,000 machine for transporting ice and two mackerel grading machines, each worth £7,000, were also destroyed.

The company had planned to open a chandlery shop in the warehouse next week.

*Boston* and *Beverley*, which was moored alongside the warehouse, had to be moved to safety.

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CORNISH BUILD-UP GOES ON

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# BRITISH RESTAURANT FISH BY AIR TO NEW YORK

THE FIRST British restaurant to open in New York for more than 25 years is being supplied with weekly consignments of top quality fish by Young's Seafoods.

Earlier this month a British Airways hostess took delivery of the consignment of seafood and whisked it away to London Airport.

The operation will be repeated every Thursday so that top quality British fish and shellfish will always be available on Richoux of Lon-

don's new restaurant menu. It is believed that the restaurant in Manhattan will be the only one that will stay open 24 hours a day for 365 days a year, including Christmas.

Situated at the foot of the giant new 53-floor skyscraper headquarters of the Citibank Corporation at the corner of 3rd Avenue and 54th Street, it will have a British manager and a staff of 40.

Free meals have been served to staff of the bank in a series of 'dummy runs' to ensure that all was perfect when the restaurant opened for

trade on Monday this week.

The Americans have asked for 'British style' in the service and the food. So the waitresses will wear 'Upstairs, Downstairs' uniforms in coffee and cream colours and the food will be typically British. The prawn cocktails are being renamed shrimp cocktails.

This weekly consignment from Young's Seafoods is another example of the determination of everyone concerned to make sure that the venture succeeds.

Each Monday the British manager of Richoux of London will phone from New York with her weekly order and, 72 hours later, the fish will be airborne in specially chilled containers.

The first consignment included sides of best smoked salmon, fresh Scotch salmon, Dover sole and whitebait, as well as potted shrimps.



Young's consultant chef, Len Howe, shows a British Airways hostess some of the Scotch smoked salmon which formed part of the first order to Richoux, New York.

## Reward for tag doubles

THE REWARD for returning a fish tag has been doubled.

Now £1.00 is to be paid to the return of any tagged fish to the Marine Laboratory, Aberdeen or to the Fisheries Laboratory at Lowestoft.

Information sent with the tag should give the position and date of capture.

The reward is payable to the return of the tag only, but the fish and tag should always be returned when possible. The owner of the fish will always be paid to full market value in addition to the £1.00 reward.

All tagged fish should be handed to the local fishery office or the Marine representative at the port.

Where it is not possible to return tagged fish by post, these should be sealed in a polythene bag, marked DAFS Marine Laboratory, PO Box 101, Victoria Road, Torry, Aberdeen AB9 8JH, or in England to the Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Parkfield Road, Lowestoft, Suffolk NR33 0HT.

## Scotland and Wales wide open

# Big crab stocks ready to be fished

## ANNUAL LECTURES

EACH YEAR the Trustees of the Buckland Foundation award a Buckland Professorship to a distinguished British marine scientist. This year the honour has gone to Dr. Eric Edwards, a principal scientific officer with the MAFF's Fisheries Laboratory at Burnham on Crouch, Essex.

Each Buckland professor delivers a series of lectures on a particular commercial species of fish or shellfish; previous lectures have included the lobster, whale, plaice, cod and herring. Dr. Edwards will lecture on the edible crab and its fishery.

CRAB LANDINGS could be substantially raised in many areas, particularly off Wales and Western Scotland, according to shellfish specialist Dr. Eric Edwards.

Giving his first Buckland Lecture to a large audience of scientists and representatives of the shellfish trade at Fishmongers' Hall, London, last week, he described how the crab has become one of the top shellfish in the country. Annual landings are worth well over £2,000,000.

A description was given of the different crab fishing areas and the type of fishing gear and boats used to catch crabs.

The biology of the crab was also described in detail: an interesting fact was the way a female crab attracts a male at the time she moults during the summer by secreting an attractant.

The males then remain with the females for up to 20 days before the females moult and then after the moult mating takes place. The male then guards the soft-shelled female for a few days.

After mating, the eggs develop in the female gonads and in November or December of the same year the eggs are laid. A female of 5 to 6 in. width will carry about three million eggs which are held for seven to eight months on the underside of the abdomen.

The lecture also described how crabs migrate. Studies by the Shellfish Laboratory at Burnham had shown that crabs can migrate distances of over 200 miles. These migrations are part of their breeding behaviour and tagged crabs have moved distances of 100 to 200 miles in 15 to 18 months.

Tagged crabs released off Cromer, Norfolk, were later caught off Flamborough Head, Yorkshire, while crabs tagged off Yorkshire moved to Northumberland and Scotland. This is a northward movement.

In the Channel, crabs were moving in a westerly direction. Usually females undertook these long-distance migrations and males seemed to stay locally.

Talking about the future of the crab fishery, Dr. Edwards stated that although there was a reasonable demand for crabs in some parts of the country, there were ample stocks of crabs available in many of our coastal areas for increased exploitation and landings could be substantially raised.

He described how off the Welsh coast and off Western Scotland crab stocks were not fished and offered considerable potential.

"The crab is one of the few marine resources which will stand further exploitation and, apart from one or two areas, stricter conservation measures are not yet required," said Dr. Edwards.

He then described how fishermen generally need a processing plant in their area to cope with large catches. While small quantities of crabs can be sold in the whole boiled form, in general this market is slowly declining because housewives will not go to the trouble to dress a crab. She would rather open a tin or packet.

Dr. Edwards said that tests are now going ahead at the Torry Research Station, Aberdeen, on mechanical picking of crab meat. "Here an American machine was now being tested in collaboration with a Scottish crab factory. If widely adopted this machine could increase UK crab meat production and make the present labour-intensive process more economical."

"New outlets would be found for crab meat and, possibly, our crab would be canned in quantity", he said.

Closing the lecture, Ken Browne of Paignton, chair-



Dr. Eric Edwards: 'ample stocks of crabs available'.

## Deckies deserted 'Ross Zebra'

THREE Grimsby deckhands who were accused of deserting the middle water trawler *Ross Zebra* at Lerwick in September have received suspended sentences.

They appeared before Grimsby's port disciplinary committee last week.

Kenneth Lockley of Scarborough and Jeffery Brown of Grimsby were given 28-day suspensions, whilst Wayne Couldstone, also of a Grimsby address, was suspended for 66 days.

## Appeared

The committee then decided to suspend the sentences for 12 months.

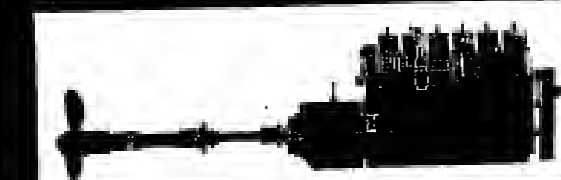
Lockley asked for the case to be heard in his absence, but Brown and Couldstone appeared at the hearing.

They were each accused of leaving *Ross Zebra* without the skipper's permission and before the BUT-owned vessel had berthed properly in Lerwick.

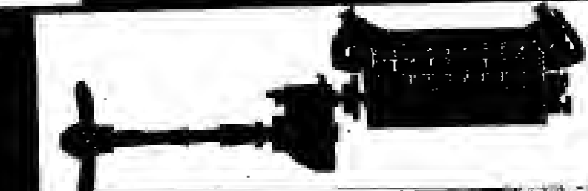
Brown and Couldstone had already been fined £50 each by Lerwick Sheriff Court for offences committed on the same trip.

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## Cherie sails in

GRIMSBY fishing vessel owners and agents, Som Chapman & Sons Ltd., has added the traditional wooden Donk anchor-seiner *Cherie* (GY 389) to its growing fleet.

The 41 ton vessel, formerly of Esbjerg (E 701), has been bought by a private concern at the South Humber side port.

*Cherie* is the fifth Esbjerg anchor-seiner to switch to Grimsby this year. Last month *Elo* followed *Pondion* into the Danbrit agency, whilst *Cherie* joins *Quest* (just renamed *Zoro*) and *Lody* (now *Susan Joy*) under the Chapman flag.

The arrival of *Cherie* meant the Chapman fleet had risen to 15 locally owned anchor-seiners, but the sinking of *Arcone Champion* cut this back to 14 again.

Fished over by Skipper B. Sanderson, *Cherie* made a most promising start at her new base with a £5,241 grossing from 210 kits.

The Danish-owned *Ulla Viole* (E 716), agent by Chappens, easily outgrossed all the local seiners with a £10,000 return from a big 297-kit turnout last week.

## FALKLANDS THE WRONG BASE

SIR, For be it from me to discourage anyone from studying the promising possibilities for fishing in the South Atlantic using distant water freezer trawlers displaced from the Arctic grounds but, before they try to follow Dr. Ewen Corlett's clerical call (*Fishing News*, October 7) to choose the Falkland Islands area, I hope they will consider the following:

1. The very real political difficulties which will soon be met with the Argentines who consider the islands (which they call Las Malvinas) and their surrounding waters as Argentine and within their 'continental sea', i.e. Exclusive Economic Zone (EEZ). (See Lord Bheekleton's report "Economic Survey of the Falkland Islands" July 1976).

2. The fact that fish are certainly not found in quantity close to the Falklands during large parts of the year, nor are most of the varieties caught particularly plentiful or easy to process, preserve and, above all, sell.

## LETTERS

3. Port Stanley is not an ideal base and there are major logistic and manning problems in maintenance and manning, but it would certainly need to fly the Argentine flag and be designed for Argentine's benefit.

Substantial investment in quays and base facilities, including cold storage, would also be necessary. Manning, logistics and maintenance would still present problems, but there would probably be less opposition here from Argentine fishing companies, mainly operating

from Mer del Plata, than if a base was established anywhere further north, nearer to the main cities and populated areas. The main concern would in any case be on exports to the USA and Europe.

The recent and earlier incidents with Soviet and other foreign trawlers clearly show how far the Argentine navy will go in enforcing an exclusive zone on their continental shelf, whether or not the EEZ is interpreted by them as, in fact, in line with the legal concepts evolving out of the UN Conference on the Law of the Sea.

The virtually worldwide extension of fishery limits is the first steps towards the

enclosure of the oceans and spells the virtual death knell of distant water fishing except for oceanic species like tuna and krill.

Our own markets must henceforth, rely on nearer and some middle water fishing, supplemented by imports. There is little left for the large freezer trawlers and almost nothing for the large freezer.

Joint ventures such as the *Othello* venture to Australian waters are almost the only alternatives to the breaker's yard.

M.B.F. RANKEN,  
Aquaculture International,  
28 Clarendon Ave.,  
London SW14

## Oysters sell themselves

SIR, I have read with interest your "Billingsgate" comments on Pacific oysters.

If the American example is any guide, these oysters are very popular even fished with chips and can be delivered fresh. In fact, minus their shells, they are sold in supermarkets where their shelf-life is about the same as that of milk.

They sell at a price which does not deter the market, but also leaves a good profit for the producer.

The secret is volume — and that's what hatcheries in Britain need before they can make profits. So, because by the nature of things the hatcheries have had to have been the first in the field with their cash, it now seems as though it is up to them to promote the consumer demand for the final product. This is to encourage the continuation of what has already been ten years of investment.

Most attempts at market stimulation have not been motivated by need and have,

consequently, gone of at half-cock. Where there has been the greatest need there has not been the backing, nor the encouragement, not even from government sources.

However, the intrinsic qualities of Pacific oysters and the enormous economies of scale which they offer — that, ultimately, they will break through the traditional resistance they have had to feed over recent years.

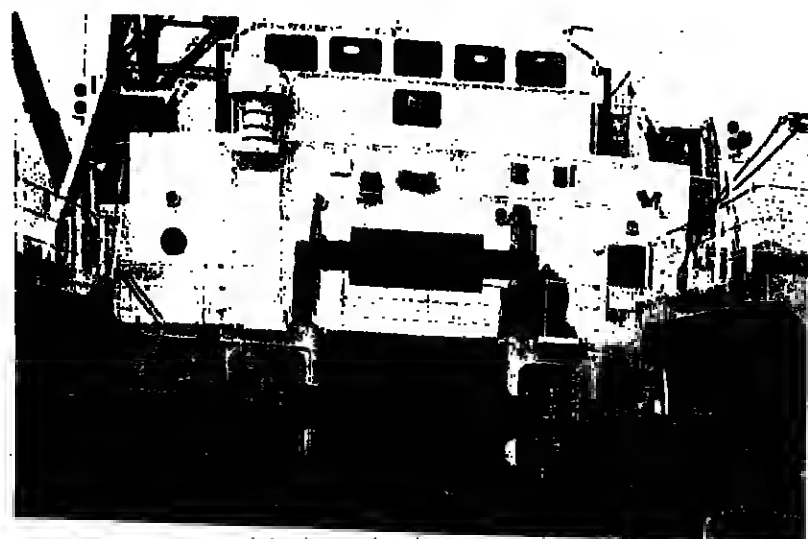
In fact, the oysters are appearing! Devon and Cornwall now have about 20 small operators growing oysters on small scale, and by the end of the year they will be producing a steady supply.

On present volumes, Pacific oysters will only sell themselves. TONY MARRILL, Torquay, Devon

## Modern Reliable Deck Machinery

## TRAWL WINCHES AND NET DRUMS

It is almost essential for pelagic fishing that a net drum be installed. Robertson's supply a range of drums with various drive systems for all classes of fishing vessels. Illustrated is a 9 cubic metre 30 ton pull net drum installed in association with Robertson trawl winches on the freezer trawler 'Goth' and 'Romen'. Our range extends from 3 cubic metres to 16 cubic metres with pulls up to 52 tonnes.



# James Robertson

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# Big mouth net scoops off the bottom

**COMMERCIAL trials with a new range of four-panel high opening trawls have produced some encouraging reactions from British skippers. Developed by the Marine Laboratory, Aberdeen, and commercially tested by the White Fish Authority Industrial Development Unit, trials have shown a considerable reduction in net damage while, at the same time, giving a larger mouth opening than traditional trawls.\***

THE MARINE Laboratory at Aberdeen has over the years made detailed studies of the design, construction and performance of traditional trawls. It has also carried out experiments to investigate factors controlling trawl geometry.

Techniques allowing obser-

vation of fish behaviour in relation to trawls have been developed and, as a result, the understanding of the way in which fish are caught has grown considerably.

The knowledge accumulated from these studies has been applied during the last three years to the development of a family of new four-panel trawls.

The aim of this development has been to produce a practical trawl having the same, or preferably higher, catching power than traditional gears, but with greater mechanical efficiency and ease of handling.

Features given priority in arriving at the designs were:

(1) A larger mouth opening than traditional trawls; especially in terms of increased headline height, while maintaining wing spread and without significantly increasing drag.

(2) Ease of gear handling, with minimum modification to existing handling systems.

(3) Reduced vulnerability to seabed damage so as to permit work over rougher ground and to reduce mending time during fishing operations.

(4) Competitive cost of manufacture when compared with traditional trawls.

(5) Maximum fuel economy by matching the scale of the gear to the ship's towing gear.

Fish often occur in quantity swimming 4 to 8m. above the seabed, out of range of traditional bottom trawls. It was therefore agreed that a high-opening net was required to catch fish and so increase the yield of bottom trawling.

Earlier studies had shown that it was difficult to achieve high opening with a two-panel trawl design suitable for rough ground without incurring a number of other detrimental changes. Attention was therefore directed to the four-panel designs.

Skippers stressed that any new gear developed must perform at least as well as traditional trawls in catching fish when they are on the bottom or swimming very close to the seabed. This meant that the total spread and ground contact of the new gear could not be sacrificed.

The requirement for higher

opening, while maintaining wide spread, leads automatically to the use of larger amounts of netting than in traditional trawls. With more netting it is important to tailor carefully so that the drag of the net is kept as small as possible.

A greater drag will cause increased fuel consumption if normal towing speeds are maintained.

Fish behaviour studies have demonstrated the importance of maintaining close bottom contact along the whole length of the ground gear, including the region between the wing ends and trawl boards.

They also suggest that large gaps between the ground rope and fishing line, through which fish can escape, should be avoided.

The net must not present escape routes through the sides, and a major aid was to arrange the geometry of the gear so that the mud cloud generated by the trawl doors spread down the sweep line to coincide exactly with the wing end of the net, so inhibiting any sideways escape in front of the wing end.

The cost of replacing netting, ropes and wires damaged while fishing is a major economic factor in trawling. It was, therefore, an important requirement that the design should aim at reducing the vulnerability of the net to damage when operated over rough ground.

In addition to saving material costs, improvement here would reduce the loss of

potential fishing time spent mending nets. It might also enable trawling to be extended over rougher ground than can be fished with traditional gear.

The belly and side panels of the new gear were tailored so that the first two feet of netting behind the fishing line streams back horizontally, but thereafter slopes upwards, keeping the lower panels clear of the seabed.

It was also an aim that the basic net should be produced in a range of sizes matched to different vessel towing powers, allowing efficient use of the power available in the wide range of vessel sizes and powers found within the British fishing fleet.

Trials to study and develop the behaviour of the basic designs of the trawl, using instruments on the gear to measure the tensions in wires, the opening heights and the

size of the net, were carried out at sea on research vessels *Mar-200* (200hp), *Clupea* (800hp) and *Explorer* (1,100hp). Further measurements were made on vessels recorded on one of the range of four-panel gears, the 92ft. headline North Sea trawl, are shown in Figure 1).

Table 1. Operational measurements on four-panel trawls\*

	88	92	127	140
Headline length (ft.)	200-400	500-800	1000-1200	1400+
Nominal vessel power (hp)	13	18	24	28
Headline height at centre (ft.)	43	52	65	75
Spread between wing ends (ft.)	6.5	7	—	—
Height of cod ends bottom (ft.)	3.25	3.5	3.5-4	4
Speed (knots)	1.9	6	8	8.25
Total warp load (tons)				

\*For comparison, equivalent figures for trawls of more traditional design are in Tables two to four.

Table 2. Measurements on trawls for 200 to 400hp vessels

Trawl type	Goshawk
Headline length (ft.)	87
Headline height at centre (ft.)	13
Upper wing end spread (ft.)	28
Speed (knots)	3.25
Total warp load (tons)	2.8

Table 3. Measurements on trawls for 500-800hp vessels

Trawl type	Aberdeen 40ft. trawl	Aberdeen 48ft. trawl	IMR bolt-rope
Headline length (ft.)	88	98	87
Headline height at centre (ft.)	8	6	10
Upper wing end spread (ft.)	38	55	45
Speed (knots)	3.5	3.5	3.5
Total warp load (tons)	4.5	7.5	8

Table 4. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 5. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 6. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 7. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 8. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 9. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 10. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 11. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 12. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 13. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 14. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 15. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 16. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 17. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 18. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 19. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 20. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 21. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 22. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 23. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 24. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 25. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 26. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 27. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 28. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 29. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 30. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 31. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (tons)	7	9.8	12

Table 32. Measurements on trawls for 1,000-hp vessels

Trawl type	Granton	Stella	Balta
Headline length (ft.)	78	98	119
Headline height at centre (ft.)	6	10	18
Upper wing end spread (ft.)	48	66	65
Speed (knots)	4	4	4
Total warp load (			



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# IRISH TO MOVE IN ON WINTER SPRATS

THIS winter Irish boats will be moving in on a brand new fishery for sprat which could result in a food fish catch of up to 10,000 tons a year for export.

The Irish Sea Fisheries Board (BIM) became seriously interested in sprat last year when a large resource of this shoal fish was found off the south-east coast.

Since the Norwegians were experienced having their own sprat fishery, BIM first contacted the Bjelland fishing concern of Stavanger with

view in a joint venture project.

It was agreed that a Norwegian vessel capable of freezing up to 50 tons of sprat a day and of holding 500 tons in cold store would participate in a pilot project.

Raw material was to be supplied by six Irish boats diverted into the fishery by the South and East Coast Fishermen's Co-operative. BIM put up a small grant to help guarantee the skippers against any possible loss of earnings.

## Joint patrols

FISHERY protection officers employed by the Devon Sea Fisheries Committee are to be made officers of the Cornwall Sea Fisheries protection staff to allow them power to act in cases of illegal fishing off the Cornish coast.

The Cornwall Sea Fisheries Committee approved the move last week and hopes the Devon group would do likewise in due course.

Chief fishery officer Brounand Tonkin told the committee that the Devon patrol boat already covered an area as far as Dodman Point.

He, as Cornwall's officer, often patrolled a part of the Devon coast. It would, therefore, be appropriate to extend arresting powers to whoever was in charge of the patrol boats at the time of an arrest.

## WFA RATES

CHANGES in White Fish Authority and Herring Industry Board loan interest rates have been made.

The new rates of interest for vessels under 80ft. and new engines are: up to five years, 8 1/2 per cent; five to 10 years, 9 1/2 per cent; 10 to 15 years, 10 1/2 per cent; over 15 years, 11 1/2 per cent.

For processing plants: up to five years, 10 1/2 per cent; five to 10 years, 11 1/2 per cent; 10 to 15 years, 12 1/2 per cent; 15 to 20 years, 13 1/2 per cent.



Tom Geoghegan

"My job will be to have markets so organised that we might be able to double the six boats in the period between October and the following February."

Mr. Geoghegan said that BIM was anxious to avoid the exploitation of the resource for fish meal: "It would be too easy to fish for intervention," he added.

"Hopefully, we could run the catch up to 10,000 tons a year for the food market and stop it there in the interests of conservation."

Not only will the sprat

fishery open up completely new markets for Ireland, but it is hoped that it will also encourage more investment ashore in freezing and canning. These are both key factors in BIM's current fisheries policy.

Reportedly, the South and East Coast Fishermen's Co-op will be getting an Industrial Development Authority (IDA) grant next year to put in facilities for freezing and storing sprat. So before long the operation — or at least part of it — could well be transferred ashore.

A processor in Castletownbere, Co. Cork is also believed to be interested in freezing and perhaps marinating sprat for the European market.

Canning of the fish would involve relatively heavy investment in specialised equipment, but BIM feels that there could well be a start made in this direction within a year or so.

Ireland's sprat fishery will be strictly limited to winter months. Water temperature is critical, since only non-feeding, gut-empty sprat are suitable for human consumption.

## Sludge dumping

A PROPOSAL to dump 4,000 gallons of sludge a day into the North Sea at Eyemouth, on the Berwickshire coast, is being considered by the Berwickshire Regional Council.

East coast fishermen are concerned over the proposal, which is being considered as a method of dispersing sludge

from waterworks in Berwickshire.

Councillor Helen Stewart told Berwickshire District Council Environmental Services Committee there were strong feelings in the fishing industry about the plan.

Councillors agreed the scheme should be closely monitored while controlled tests are carried out.

# BIG MOUTH TRAWL

Continued from p 9

92ft. headline (34 in. mesh square) version of the trawl regularly between July and November 1976 around Rockall and on other Scottish west coast grounds.

He reported that his catches were usually as good as, but no better than, those of other vessels using conventional trawls on the same grounds. But there was a marked reduction in net damage.

Some twisting of the twin bridle was experienced on hauling, but this was not so much as to be a cause of difficulty.

However, excessive wear on the lower bridle was a problem, although this would have been eased had bumper bobbins been fitted at the end of each lower bridle to lift the eye off the ground (figure 2).

Skipper W. Wilsoo of Deeside, who originally fished a 92ft. headline net supplied by the Marine Laboratory, continues to work successfully with a four-panel trawl modified to suit his own requirements.

Modifications include a broader square and belly of 44 in. mesh and 24 ft. of slack netting in the length of each side panel. The lower spreading wire is split at a 90° angle and butterfly assembly, the top leg being attached to the fishing line, and the lower to the ground-drops.

Gear damage has been very small when fishing on very

hard ground and over sand banks.

Skipper J. Forquhar of Canopus, who fishes an 86ft. headline four-panel trawl, reports that his catches have been similar to those with his conventional trawl, but he is now able to fish much harder ground. That alone justifies continued use of the net.

Overall, skippers report that the incidence of damage has been considerably less with the four-panel gear than with other gears used on the same ground. Several skippers have reported that they have been able to operate successfully on grounds which were known to damage their previous gear.

On the other hand, on those occasions when damage occurred, the net had to be properly mended because there is little or no slack netting to enable the edges of a hole to be quickly laced together.

In most instances skippers have found the new gear easier to handle during shooting and hauling and, in some cases, time savings of about 10 minutes per haul have been recorded. However, some of the crews had no previous experience in handling a twin-bridle rig and they had initial difficulties in preventing the bridle from twisting up during hauling.

Experience has shown the advantage of using different backstop/kelly's eye rigs for side trawling as against stern trawling to reduce twisting.

Details of the recommended systems are shown in Figure 2.

Reports by skippers indicate the some or somewhat higher catch rates with the new four-panel trawl than with other traditional trawls fished alternately on the same vessel, or on similar vessels alongside. In some cases considerably more fish was caught, notably during daylight hours when the fish were seen on the echo sounder to rise off the bottom.

Taking into account the increase in available fishing time arising from reduced net damage and easier handling, there would seem to be potential for a considerably increased overall yield for a given trip length.

In addition to the nets supplied by the Marine Laboratory and the WFA, reports have been received from net makers that at least another 11 vessels have independently purchased nets made up to the Marine Laboratory specifications.

Between 1976 and July 1977 some 38 vessels, ranging from 180 to 1,950hp, have used the four-panel trawl. A recent survey at Aberdeen showed that, out of 53 trawlers landing there, ten were using the Marine Laboratory four-panel gear. Most of the nets used to date have been made up by the Aberdeen net makers, W. Wood & Sons Ltd. In close consultation with gear technologists employed by

the Marine Laboratory.

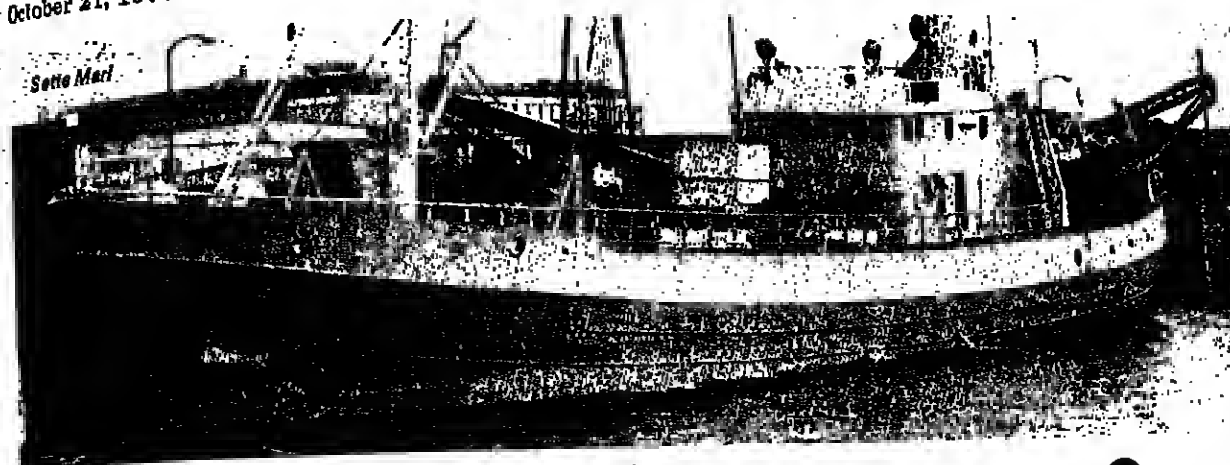
Some nets have been made up elsewhere and there is no reason why they cannot be made satisfactorily by any experienced net-maker provided the specification is strictly followed.

Future development work by the Marine Laboratory will include the design of additional models to extend the range of trawls suitable for vessels with powers from 100 to 2,000hp, plus further refinement of existing models with the aim of reducing drag, especially by the introduction of more efficient otter boards into the overall specification.

The WFA feels that promotion of the present range of trawls has been taken to the point where, if real advantages over traditional gears exist, the new trawls will be able to steadily increase in popularity. Further samples of the present range will not, therefore, be offered on self-return.

Owners or skippers interested in taking up this new trawl design or seeking advice on rigging should contact the WFA Industrial Development Unit, Hull, or the DAFS, Marine Laboratory, Aberdeen. Copies of Technical Report No. 151, on which this article is based, are available free of charge. The British Fish Industry, from the White Fish Authority, Industrial Development Unit, Sk. Andrew's Dock, North Humberside.

October 21, 1977



# Latest electronic 'eyes' for purser

A PROTOTYPE German sonar has been fitted to the UK's largest purse seiner and she will be trying it out on the south-west mackerel.

The 148ft. Fraserburgh-registered Sette Mari has also taken on board a new smaller sonar and a new radar.

The prototype sonar is from Krupp Atlas-Elektronik and has been designed for the larger class of vessel.

Named the Atlas Fishing Sonar 600, it displays echoes on a cathode ray tube screen. Scanning can be carried out through 360 degrees in 90 degree sectors and the unit uses a 25-element ceramic transducer.

## Vertical

An unusual feature is that an elevation view of a fish shoal can be displayed on a section of the screen, thereby indicating not only the depth of the shoal but also its vertical movement.

Another advantage of the sonar is that information is stored before display to eliminate unwanted echoes and to give a clear picture.

Soundings can be made in five ranges from 250 m. up to 4,000 m. and the set also offers audio indication.

The transducer unit has been fitted to the vessel on the pontoon in Aberdeen and the display cabinet will be delivered in a few weeks' time. Her smaller sonar is the American Wesmar SS220 computerised scanning sonar which has been finding favour in the Scottish fleet recently. It is particularly liked for its good detection of mackerel.

Also while in Aberdeen Sette Mari took delivery of an RM916 radar from Decca.

Skipper Jim Slater, who bought the 148ft. Sette Mari secondhand from Sweden earlier this year, told Fishing News that he is very pleased with her performance.

He said that the mackerel fishery is proving to be very

successful for the Scots and it is a very good thing that there is now a cut-back on industrial fishing.

Sette Mari has been earning higher prices for the past

few weeks by landing her Minch-caught mackerel in Denmark. Fish have been plentiful and Sette Mari has caught as much as 700 tons in one shot of the net.

There is a huge demand in Denmark for mackerel caught for human consumption and Skipper Slater said that this Danish outlet has been relatively untouched by UK vessels.

Skipper Andrew Tait of the Fraserburgh purser Chris Andra has also been landing in Denmark.

All the Scottish pursers have been working Minch mackerel and there has also been quite a keen demand from UK buyers.

The Russian motherships based on the Scottish west coast have brought a fair amount for freezing on board and fishermen are sorry that the ships have now sailed off.

Fishermen have been working a quota system of 30 to 50 units per man each night, but Skipper Slater said that none of these huge hauls were wasted. Part has been handed over to other boats.

For some weeks the biggest fishing has been in the North Minch. Now, the shoals are now moving into the South Minch.

# London show boat

WORK HAS started on the first boat in a series to be moulded and fitted out at the Orkney factory of Halmatic (Scotland) Ltd.

The 29-footer is for a Scottish customer and work is now progressing on the hull moulding. The craft will be completed for display at the London Boat Show in January.

Pierce Webb, the firm's managing director, said last week that the company had very healthy orders worth £130,000.

Earlier this year the firm was saved from closure when the Highlands and Islands Development Board and Orkney Islands Council each took a one-third stake in the company which had been run

wholly by the Hunting Group.

The company's fishing orders include three 36ft. part assemblies for Iceland and two 28ft. hulls for Scottish and Irish customers. The firm has just delivered a 36ft. hull for fitting out for a French client.

"This complete change in our fortunes has been the result of a lot of hard work on new markets and complete faith in the company's future by all concerned," said Mr. Webb.

This will also mean work for other Highland boatyards which have been badly hit by a lack of orders from the fishing industry, their principal market.

J. W. McKay of Stromness, Orkney, is currently fitting out the boat for France.

The three 36ft. trawler part assemblies will be delivered to Iceland for completion by a boatbuilding company at Skagastrond, in north-west Iceland, with which Halmatic (Scotland) has concluded a licensing agreement.

Boatbuilders Triamund Gudmundur Larusson and HP are converting their yard from timber to GRP construction. Halmatic's designs and construction methods were chosen as the most suitable for Icelandic waters following a two-year study of European GRP boatbuilding by the Icelandic State Directorate.

The company has already delivered the 36ft. liner-trawler Anny, which is now fishing north of Skagastrond within 35 miles of the Arctic Circle.

The three part assemblies will be fitted out in Iceland under the supervision of Halmatic (Scotland), which is also training personnel. Work to mould the first 29ft. hull to Iceland will begin later this year and will be followed next year by 36ft. vessels and other designs. This includes the 54ft. design similar to the seiner-trawler George Weatherill built in 1973. She is still the largest GRP fishing vessel in the United Kingdom.

"The Icelandic contracts and licensing agreement represents an important breakthrough for the company," said Mr. Webb. It will mean continuing business over the years.

"And we plan to develop a new 24ft. heavy deployment fishing boat hull early next year to further augment our range."

The rise in the company's fortunes and the decision to fit out hulls has led to the labour force being doubled to 16 since the company was restructured in June.

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